

THE AMERICAN JOURNAL OF UROLOGY

VOL. II.

NOVEMBER, 1906.

NO. 14

REPORT OF TWO CASES OF GONORRHOEAL INVA- SION OF THE KIDNEY AND RENAL PELVIS.¹

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THE rare occurrence of the gonorrhoeal complication of the kidney, gives some interest to any report of these cases. Suppurative inflammation of the kidney and of the renal pelvis always results from microbic origin.

From the different kinds of micro-organisms causing the disease, it has been divided and classified. Micro-organisms causing inflammation are often together, and as a result they produce cases of mixed infection, which cannot be easily distinguished.

The gonococcus, a pus producing germ, can make its way to the renal pelvis and to the kidney, causing gonorrhoeal pyelitis and nephritis as complications of gonorrhoea.

CASE I.—An Italian fruit vender, twenty-three, of poor physique, in delicate health, came to take treatment for an acute gonorrhoeal anterior urethritis. He received irrigations with solution 1 to 5000 of permanganate of potassium, and salol tablets internally. He did not come back to report, as he stated that he was much better. Four weeks after we were called to his house on account of an acute pain in the left side of the lumbar region, which prevented him from walking and compelled him to remain in bed. Two nights before he had been at a dance, where he had danced until morning. When he came out he was in a perspiration, exposing himself to the cold air of a winter morning.

The pain was in the region of the left loin, which was somewhat swollen, and exceedingly tender to pressure, the pain ir-

¹ Read at the Annual Meeting of the American Urological Association, Boston, June 4-5, 1906.

radiating towards the abdominal side. He had fever, 102° F., nausea and vomiting, and a general rheumatic condition.

The urine was somewhat diminished in quantity, as it was less than two pints in 24 hours, turbid and thick. Reaction was neutral, specific gravity 1016, albumin abundant.

Microscopic examination showed blood corpuscles, pus cells, and a large amount of renal casts. The sediment of the urine obtained by the centrifuge and stained with methel blue, showed in the casts different bacteria, but more often a large quantity of gonococci. Thus it was proved beyond a doubt that the nephritis was from the gonorrhoeal invasion of the tubular system.

The fever subsided, the urine began to clear up, the acute pain to grow dull, and gradually within three weeks the patient was able to sit up. The urine turned acid, with a specific gravity of 1020, of a yellowish dark color, with some mucous sediment. The microscopic examination showed in the sediment some pus cells, epithelial cells, amorphous phosphate salts, but no more casts.

The treatment consisted in the administration of calomel, saline purgatives, and large doses of salol, from 30 to 40 grains per day, and then urotropin.

The other case occurred in a Greek, a waiter in a restaurant. A young man of twenty-four, of good physique, in excellent health. He came to consult us for an acute gonorrhoeal anterior urethritis. He, too, received permanganate irrigations and salol internally. The patient continued his treatment and was not seen again. We were called to attend the same patient some six weeks after in his house, on account of a violent pain in the right lumbar region, irradiating towards the abdominal side. The pain was so severe that the patient could not remain quiet in bed, and the subcutaneous use of morphine was necessary to keep him there.

He attributed the pain to a strain while waiting at a banquet and carrying around a large quantity of dishes. After serving at the banquet, he was freely perspiring and went home, exposing himself to cold air in mid-winter.

He had fever ranging between 101° and 103° F., nausea, vomiting, and also pains in the joints. When reminded of his gonorrhoea, he said that he thought he was well, as he did not see any more discharge.

The examination of the urine showed it to be scanty in quantity, acid in reaction, with a specific gravity of 1012, thick and turbid, with an abundant white creamy sediment falling to the bottom of the glass like sand.

It contained albumin in abundance. Under the microscope it showed a large quantity of casts containing pus cells, epithelia, studded with gonococci.

The fever and the acute pain gradually subsided, the tongue began to return to a moist condition, and the pain dull in character, was gradually progressing towards the abdomen. The urine began to increase in quantity, the specific gravity to augment, and the purulent sediment to become less. The treatment, as in the first case, rested mostly on the use of salol, urotropin, and in the application of hot fomentations on the lumbar region.

In both cases, we find that the nephritis and pyelonephritis is the complication of gonorrhea, that it is an extension of the gonorrhoeal invasion. We find that this invasion comes between the fourth and the sixth week from the first urethral gonorrhoeal infection. In this regard, we find our observations somewhat different from those of Rendu¹ of Coats, and Carlslaw² and of Wladimirsky,³ who have found in their cases a long interval of time between the infection and the onset of nephritis. In the case of Rendu, the patient was suffering with gonorrhoea for over a year, and nephritis was at first considered the result of santol, copahib and cubeb, with which the patient was fed.

We believe that too often cases of gonorrhoeal nephritis and pyelo-nephritis have been attributed to the use of balsams, or of urinary disinfectants, as urotropin, salol, etc. We must see in our cases not only a urogenital infection in the sense of Küster and Wagner,⁴ where the gonococci from the posterior urethra have travelled to the bladder, and through the ureters to the renal pelvis and to the kidney, but also a hematogenic reason of infection.

¹ Rendu Nephrite mixte de nature blennorrhagique. *Gaz. des hopit.*, 1889-97. Ref. *Arch. Derm. und Syphil.*

² Coats and Carlslaw. *The Glasgow Med. Journ.*, vol. 39, No. 6, June, 1893.

³ Wladimirsky, M. Die Gonorrhoeische Pyelitis und Nephropylitis. *Derm. Zeitsch.* Bd. X, p. 320.

⁴ Wagner, P. Handbuch der Urologie. *Frisch und Zuckerhandl*, Bd. II, p. 178.

There has also to be taken into consideration the presence of other microbes, which in consequence of a long-standing gonorrhoeal inflammation, find good ground for their development in all parts of the urogenital tract. The presence of these micro-organisms has not much influence on the mucosa of the bladder or of the ureters when it is in perfect condition. But when the mucous membrane is wounded, is abraded, inflamed by the presence of the gonococci, the other micro-organisms find places for their development. The presence of bacteria in the bladder is usually the cause of alteration of the urine which causes catarrhal inflammation of the organ. This catarrhal condition starting from the bladder, progresses to the ureters from which the gonococci find their way to the renal pelvis and to the kidney.

In our cases different bacteria have been found in the urine, which suggests the possibility of a mixed bacterial and gonorrhoeal infection. In every case of pyelonephritis there have been found staphylococcus pyogenes, streptococcus pyogenes, bacterium coli commune, proteus vulgaris Hauseri, etc.

In both cases, however, the gonococci were prevalent. For this reason we incline much more to consider it a mixed infection. Pure gonococcus infection is difficult to be conceived on account of the long distance between the urethra and the renal pelvis. Moreover, in both cases there cannot be excluded an hematogenous infection from the gonococci. Both patients were exposed to violent exercise, both in full perspiration underwent an abrupt change of temperature. The influence of the intense change of temperature from heat to cold, brought on the peripheral circulation towards the center, which may have played an important rôle in the production of the inflammatory process of the renal pelvis and of the kidney. Both patients were suddenly taken ill with local pain in the loin, nausea, vomiting, pains in the joints, and fever. In both cases the onset of the disease shows characters of a general infectious disease with localization in the kidney.

As Finger⁵ states, the diagnosis of gonorrhoeal pyelitis is often improperly made. In cases of acute gonorrhoea, pain in one or both loins, tenesmus, some albumin in the urine, together

⁵ Finger, E. *Blenorrhoea of the Sexual Organs and Its Complications*, 1894, p.

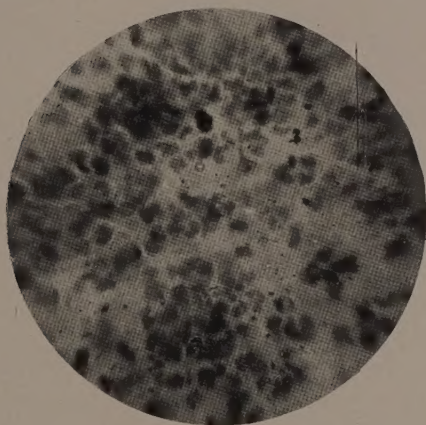


FIG. 1.

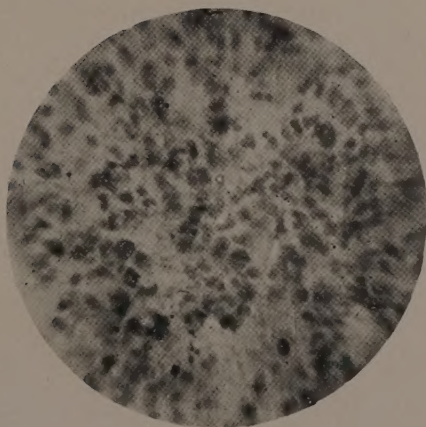


FIG. 2.

with pus, do not constitute a case of nephropylitis, but it is only a reflex symptom. When the tenesmus is ameliorated, the albumin diminishes at once. In cases of pyelonephritis, the amount of albumin is larger than that of the pus, and there is the presence of casts and of epithelium of the straight urinary tubules in the sediment.

Several cases of gonorrhoeal pyelonephritis have been reported by Fuerbringer, where in consequence of an attack of cystitis, chills and fever developed, with polyuria, pain and tenderness in the region of one kidney, vomiting and headache. The presence of casts in the sediment of the urine confirmed the diagnosis.

These cases lasted for some time, but finally terminated without consequences. Both our cases have recovered after several weeks, without leaving complications.

In regard to treatment, it would be very appropriate to use antiseptic solutions in the urethra and in the bladder to prevent the septic condition. This can be done with irrigations with warm mild solutions of 1% boric or salicylic acid in sterilized water. In the acute stage, however, of the pyelonephritis, the application of irrigation is not always possible, on account of the violent pain. It is better in these cases to limit ourselves to hot applications in the region of the loin, to afford relief to the acute pain.

Internally, in both cases, we have relied on the antiparasitic action of salol and of urotropin. Both remedies have the remarkable property of diminishing the quantity of pus, and prevent the fermentation of the urine.

By the administration of these remedies we saw our patients improve and gradually recover from this complication of gonorrhoea.

DISCUSSION OF DR. CUMSTON'S PAPER (SEE JULY ISSUE OF JOURNAL)
AND DR. RAVOGLI'S PAPER.

DR EDGAR GARCEAU, Boston: Anuria is one of the most alarming symptoms that can arise in connection with diseases of the urinary tract, but it is fortunate that it is seldom immediately fatal. This gives an opportunity for its relief. The temptation has been to wait too long, however, before resorting to surgical measures, in the hope that the urine will begin to flow once more. The tendency nowadays is to operate much earlier.

The following cases illustrate some of the phases of the trouble. Slight opera-

tions on the lower urinary passages will sometimes give rise to the affection, even most trivial surgical interference. This was illustrated in a case in which I passed the ureteral catheters in the course of an ordinary examination of the upper passages. The woman was about forty years old, and she was suffering from tuberculosis of the urinary organs. The examination presented no unusual difficulties and the catheters were introduced into the ureters without any special trouble. She had complete cessation of urinary secretion for a period of three days, during which time the usual means for starting the urine was tried, but without avail, until some dry cups were put to the lumbar region. I suppose these must have exerted a favorable influence, for the urine began to flow about ten minutes after the cups had been applied. It was interesting in this case to notice that while the urine no longer flowed over the vesical mucous membrane, the patient was perfectly comfortable and had no pain nor vesical irritability whatever.

Anuria following nephrectomy is the most serious form that can be encountered, for it means either that the remaining kidney has ceased to work, perhaps temporarily only, or that the remaining kidney is damaged and cannot take upon itself the increased strain, a condition that has not been recognized. This last condition must be eliminated by every careful surgeon.

There is a condition, however, which may affect a kidney supposedly sound that is most difficult of diagnosis and in some cases impossible of diagnosis. The following case is illustrative:

Mrs. C., twenty-two years old, had been married two years, and had one miscarriage. Three months before she was first seen she had an attack of pleurisy, with an indefinite history of an abscess, which she stated "opened inside." She had lost a good deal of flesh and appeared to be a sick woman. The chief complaint was a severe pain in the left lumbar region from which she had suffered for two years or more. There never had been any pain whatever in the right kidney region nor had there been any symptom or sign on the right side which called attention to it. The chief source of complaint was the frequent painful micturition which gave her no rest night or day. There had never been any hematuria.

On examination a large kidney was easily made out on the left side, and over it the abdominal muscles were quite resistant. There was also a large kidney on the right side, which, judging from the history of the case, was supposed to be due to compensatory hypertrophy.

Under ether, the bladder was seen to contain a few ulcers, which were afterwards shown to be tubercular by the guinea pig test; there was also evidence of severe vesical inflammation. Both ureteral orifices were not remarkable. As there was some risk in introducing a catheter into the ureters the Harris instrument was used, and with this instrument, a small amount of urine was obtained from the right side, and none at all from the left side. The urine from the right kidney was clear, contained no pus, and had a urea percentage of .63. It was thought that this low percentage on the right, as well as the anuria on the left, might well be explained by the nervous element which was present as well as by the effect of the ether. The blood freezing point was .58 below zero centigrade.

As the patient was suffering very severe pain in the left kidney, which had been present for two years, and as she demanded relief imperatively, it was determined to make an exploratory on the left side. This was accordingly done, and a large tuberculous kidney was found which was removed.

She had immediate anuria which could not be relieved by ordinary means, and

at the end of five days a nephrotomy was performed on the right kidney. The large size of kidney was at once seen to be due to a polycystic condition. She died the next day in a uraemic convulsion.

At the autopsy the right kidney was found to be three times the normal size and to be made up of numerous cysts; there was considerable normal kidney tissue left, enough to secrete the urine obtained at examination. A small amount of urine found in the kidney contained exactly the same amount of urea as was found on this side before operation.

This case illustrates the extreme difficulty of making a correct estimation of the soundness of a supposedly healthy kidney, and it also is an argument in favor of Edebohl's plan of making a double lumbar incision in these cases.

DR. BRANSFORD LEWIS, St Louis, Mo.: I wish to speak on two points. One, as to the propriety of operating on a sole remaining kidney presenting stone. In a case of mine in which the left kidney was reduced to an inert mass, the right kidney eliminated the urine alone and was proved to possess a stone about half the size of a pigeon's egg. I explained the precarious situation to the patient, saying that I thought the outcome would be less serious if he were operated upon. I did a nephro-lithotomy, and the same kidney has been acting satisfactorily since then. I wish also to mention a case, the like of which, demonstrated during life, I never heard of before. A patient suffered for five years with recurrent attacks of gonorrhoea. He had been the rounds of the profession in the East as well as in the West. I had tried for three weeks but could not get rid of the gonococci; then I determined to catheterize the ureters for further information as to the source of the infection. I found on the right side of the trigone, one ureteral opening and on the left side two openings. I passed ureter catheters into the two openings on the left side; then, taking out my cystoscope, I drained the two ureters and found two different urines from this one, left side. One was clear and the other loaded with pus and gonococci. Later, I catheterized the right ureter and obtained healthy urine. These observations led to the conclusion that the inner ureter on the left side was infected with gonococci. I washed it with a three per cent. argyrol solution and the pus markedly decreased. With three catheters armed with stylets passed into the three ureters, I took an X-ray picture and had an excellent result, showing two ureters on the left side, and one on the right. It is probable there is one kidney on the left side, divided into two parts by elemental tissue, one part giving rise to infected and one to non-infected urine. I take it to be the first time on record in which this condition has been demonstrated in the living subject.

DR. A. ERNEST GALLANT, New York, N. Y.: The subject of anuria was painfully brought to my attention last month, by the sudden death of a woman from whom I had removed a kidney. She was suffering from aortic stenosis, with mitral insufficiency. She left the hospital four weeks after operation, in excellent health. The next day anuria developed, and she died within five hours. Was death due to the kidney or was the anuria due to the cardiac lesion?

DR. M. W. WARE, New York, N. Y.: I don't wish to cast any doubt on the correctness of the diagnosis of Dr. Ravogli's cases, but I think that in such rare cases as these, we are entitled to have some explanation. If there was evidence whether the gonococcus reached the kidney by an ascending process or not, we want some pathological picture of the ureteral orifice and before we can definitely state that the urine containing pus came from both kidneys, we must know whether they could not reach the urine in some other way. These facts have been withheld from us.

DR. GEORGE K. SWINBURNE, New York, N. Y.: I don't know what Dr. Ravogli's answer is going to be, but some of these cases must necessarily be incomplete because of our hesitancy to use the cystoscope in a man very ill with this condition. I had a case, a man with a chronic prostatitis of six months' standing, and in the course of a few days' treatment he began to feel sick and his temperature ran up, and his appearance was that of a man coming down with typhoid. I referred him to his family physician. His family was out of town and he went to them. He did not react to the Widal test. His temperature increased daily until it reached nearly 105, when it began gradually to drop until it reached normal. He made a complete recovery. He evidently had some gonorrheal infection of the kidney, but just what proof there was I don't know, but his symptoms during that time led the physician attending him to make that diagnosis. A cystoscopic examination, however, on a man in his condition, I believe to be entirely out of the question. When he returned to me about six weeks later, all his symptoms had cleared up, and to have used the cystoscope then would have been an unnecessary performance.

DR. A. RAVOGLI, Cincinnati, Ohio. (Closing): In reference to the use of the cystoscope, both the patients were in such terrible agony that I never thought it possible to apply it in that condition; furthermore in infectious diseases, I would never advise the use of an instrument, which can carry and spread infection. When I found the casts studded with gonococci it was sign enough for me that I had gonorrheal infection of the kidney.

MOVABLE RIGHT KIDNEY THE MOST COMMON CAUSE OF CHRONIC APPENDICITIS IN WOMEN.¹

By W. P. MANTON, M. D., Detroit.

SEVERAL years ago, in a published paper, I ventured the assertion that movable right kidney in women is the most common cause of chronic appendicitis. This statement has, as far as I know, remained unchallenged, save in the monumental work of Dr. Kelly on Appendicitis, where it is averred that such had not been the experience of that writer, nor of another surgeon whose statistics are there cited. So frequently, however, have I since met with the associated conditions under discussion, that the truth of my former statement becomes more and more evident, and I am glad of this opportunity to reiterate what I have already placed on record. In order to put before you facts and not theories, I have carefully gone over five hundred cases noted in my private records. These were all office patients who had come for the relief of various genesic ailments, and on whom

¹ Read at the Annual Meeting of the American Urological Association, Boston, June 4-5, 1906.

a systematic abdominal examination was carried out. Among the five hundred women, chronic appendicitis was diagnosed in *287 or 57 per cent.* Abnormal mobility of the right kidney, varying from a downward movement of a few inches to a ptosis into the pelvis, was found in *208 or 41 per cent.* Appendicitis was diagnosed alone in *159 or 55 per cent.*, and associated with loose kidney in *123 or 42 per cent.* Of the total number of cases suffering from chronic appendicitis, *86 or 29 per cent.* underwent operation, *32 or 37 per cent.* of these being complicated by loose right kidney. The appendices removed in the associated conditions were nearly all subjected to microscopical examination and in every instance a report of chronic appendicitis, frequently combined with acute changes, was rendered by the pathologist. From the foregoing it appears that, in the writer's experience, loose right kidney is associated with chronic disease of the appendix in *42 per cent.* of cases coming under observation. The relationship of the two conditions is evidently brought about through circulatory disturbances initiated by the abnormal mobility of the kidney, and probably arises in different ways, according to the degree of kidney displacement: First, as was suggested by Edebohles, through pressure of the superior mesenteric vessels by the kidney against the head of the pancreas, second, possibly, by the stretching and displacement of the mesenteric branches themselves, thus interfering with the circulation of the organ and giving rise to stasis in the efferent vessels, and, third, as pointed out by Carl Beck, by direct pressure of the kidney on the appendix itself.

32 ADAMS, AVE., WEST.

DISCUSSION.

DR. EDWARD REYNOLDS, Boston: I find that I can hardly agree with my friend Dr. Manton as to loose right kidney being the most common cause of appendicitis in women. It seems to me that appendicitis is in my experience, more common than mobility of the right kidney, to a degree which one can call pathological. A very large number of cases in which loose kidney is noted, have sufficient appendicitis to be a cause of symptoms, but my impression of the etiological relationship between the two has taken rather the reverse side from his. I think this is a pathological point that has not yet been worked out to the point of demonstration, but of which we can judge by analogy. We know that the fold of peritoneum which forms the meso-appendix is at an early stage of development, the same fold which forms the meso-colon on the right side. We know that they have common lymphatics. We know that the kidney is originally included in the same fold. We also know that

there is a very general association between chronic appendicitis and the low right kidney, and I have been inclined to believe that the analogy could be carried on a step further, that absorption by the lymphatics of the meso-appendix in inflammatory conditions of the appendix is an etiological cause of the movable or low right kidney. Certainly I feel that if one has occasion to operate on a movable right kidney, he should think carefully about whether it is not necessary to remove the appendix at the same time.

W. P. MANTON, Detroit. (Closing): I have nothing further to add. I want to emphasize, however, that chronic appendicitis is produced very frequently by a loose kidney. The only objection I can see to Dr. Reynolds' theory is that in very many of these cases where the kidney can be held up by a simple belt, the appendix, unless the change has gone too far, is often entirely relieved. If the condition arises from below in the pelvis the condition of the appendix itself being dependent upon the kidney, we would not get that result; and yet I find in very many cases complex relief of the appendicitis results from holding the kidney in place by the belt, even in the presence of pelvic lesions.

RUPTURE OF THE URETHRA: A REPORT OF CASES.¹

By FREDERIC J. COTTON, M. D., Boston.

THIS list of ruptured urethrae is but a short one—only four; a short series to reason from, but one which chances to include most of the possible conditions and most of the probable results.

CASE 1. D. O'N., was seen at the Relief Station, August 7, '03; it was the usual typical case—traumatic rupture in a previously sound individual. He had fallen into the hold of a vessel, struck on his feet, so he said, and then on his buttocks. There was an ankle fracture on the right, a sprain of the left ankle. He had bleeding from the meatus. He could pass a stream of urine—bloody—but the house officer could not pass a sound.

He was etherized and a perineal incision made onto a sound. There was free intra-urethral bleeding; after opening into the urethra, exploration showed tearing of the mucous membrane on the floor of the membranous portion. Nowhere was the urethra torn through. The urethra was irrigated and a permanent catheter tied in. Over the catheter the urethral wall was very loosely sutured with cat gut and the outer structures lightly sutured with silk worm gut. The subsequent course was that usual in

¹ Read at the Annual Meeting of the American Urological Association, Boston, June 4-5, 1906.

such cases; on the removal of the catheter after five days, there was some purulent discharge. That night he had a chill and a temperature of 106° ; next morning (after gr. x of quinin) the temperature fell to normal and stayed there. The wound was healing by granulation when he was discharged.

It is fair to assume that a traumatic stricture resulted in this case, requiring the persistent use of sounds to keep it open. When he was discharged from the hospital, healing had progressed to something like a closure of the fistula—probably a permanent closure.

CASE 2. Garabed S., was a rupture in coitu, seen February 13, '04. He had had some venereal trouble three months previous. There was very profuse hemorrhage for one day, producing marked reaction of pulse, etc., but without local external signs of definite character. It seemed safe at the time to assume that the tear was incomplete essentially of the mucous membrane alone. At all events, no operation was done.

A catheter was tied in. The hemorrhage ceased. The next day there was "urethral" fever reaching 103° which yielded promptly to irrigations in bulk, and the patient was shortly, at his request, against advice, discharged. He believed himself cured—at all events, there was no extravasation, no chance of trouble unless from subsequent cicatricial contraction. The catheter pressure had promptly relieved the bleeding. After five days he went home. I have no later data on this case.

CASE 3. J. T., was really interesting. It concerned a man of sixty-two years, previously healthy so far as the uropoietic system goes, and in good general condition.

He was first seen at the City Hospital Relief Station, February 13, 1906, in the evening. He had that morning fallen, while at work, across the edge of a manhole hatchway, one leg in and one outside, in such fashion as to strike his perineum, somewhat toward the right side, according to his story. He had kept at work through the morning, though there had been free bleeding from the urethra. Only late in the afternoon did the inability to pass urine impress him as something worth attending to, and he came to the Relief Station.

I saw him late in the evening. There was still some drip

from the meatus. There was obvious ecchymosis in the perineum with a somewhat boggy mass about 1x2 inches in size. He had not succeeded in passing urine in any quantity, but had passed fluid and clotted blood.

Operation was advised and accepted.

Under ether the usual incision was made in the middle of the perineum over the haematoma. On cutting down to the Wheel-house sound which had been inserted, a considerable cavity, lined with clot and with fluid blood, was found just in front of, and at the anterior end of the bulb. On sponging this out the urethra was found to be torn to shreds at the front end of the bulb—the tear extending for an inch in length and encircling the whole urethra except about one-tenth of an inch on the upper side. A sound could be passed to the bladder without any trouble, but there was a good deal of difficulty in arranging the torn urethra. The sound was removed and fine silk sutures placed to repair the upper portion of the tear, these being tied. Other sutures were placed so as to bring the torn edges into proper apposition, but were left loose. A catheter of 30 French caliber was then inserted into the bladder, the urethral wall arranged over it and the loose sutures tied. No preliminary dissection of the urethra from the surrounding tissues was necessary except at one point behind. When the suture was completed, the lower wall was formed in part of a long triangular strip, with the apex forward, about seven-eighths of an inch long, and at its base including one-half the circumference of the urethra. A few accessory stitches were placed in the urethral wall. The wound was again irrigated and catgut stitches were inserted, bringing the tissues together layer by layer. A small wick was left in at the back end of the wound. The rest of the skin wound was closed by interrupted sutures. The usual siphon drainage was established. There was no considerable shock.

On February 15 the wick was removed and was followed by a few drops of serum, but no urine. The catheter was not removed at all until the 21st, eight days after the operation. At this time, the wound was apparently healed, and from this time the urine was all discharged by the meatus.

For a week after the removal of the catheter occasional ef-

forts to pass sounds failed, but on the 28th a 29 French sound was passed without trouble by exerting traction on the scrotum and perineum upward and forward during its passage. There was no trouble after this and on March 5, three weeks after the time of operation, the patient was discharged, entirely well, with the wound closed.

He was examined from time to time after this and there was no difficulty in passing sounds up to 29 French, and no trouble with the stream.

When last seen, about six weeks after the accident, it was impossible to feel, with the sound in the urethra, any thickening whatever about the point of suture.

In reply to a criticism that has been made, I would say that silk sutures were used in the deep layer in this case simply because so many had to be used that the mere bulk of cat gut constituted a distinct disadvantage. The silk seems to have done no harm.

CASE 4. D. C., was that of a teamster aged forty, alcoholic, having previously had gonorrhoea twenty years ago, and some trouble since.

The history obtained after the operation was that he had for three or four years noticed that his stream of urine had been getting small. He also gave an account of having had an abscess in the perineum, but could give no further data. This history was not obtained before operation.

He was seen February 17, 1906, at the Relief Station. The history was that he had been unloading a team that morning, when a box from the load struck one end of a skid in such fashion as to throw the other end against him, hitting him a severe blow in the perineum. He did not quit work, although the injury was painful. He could pass water, but with some blood admixed. When he entered the hospital, the bladder dullness extended two fingers above the pubes. He was passing bloody urine in small amounts. Operation was advised and accepted.

After he was under ether there was discovered a scar on the right side about an inch and one-half in front of the anus, and about this and extending toward the middle line was a good deal of scar tissue. A Wheelhouse sound was passed and a median incision made onto it in the middle of the perineum. The usual

hematoma was found into which projected the end of the front part of the torn urethra. A search for the posterior end showed only dense fibrous tissue in which no opening could be found. This evidently was the scar tissue belonging to the periurethral abscess (or Cowperitis) which produced the external scar. After wasting some time in searching, this scar mass was split in the middle line, but nothing was found save dense scar tissue. It was finally necessary to cut anatomically² for the membranous urethra as I have at times been forced to do in impassable strictures. The urethra was found without trouble behind the scar and followed forward for an inch and a half or thereabouts. The urethra was only the size of a filiform bougie, and displaced to the left. At the front edge of the scar tissue it ended. No attempt was made to dissect out much of this scar tissue or to do a formal plastic operation. A catheter was passed from the meatus to the bladder, and more room made for it where the strictured urethra traversed the scar. Cat gut sutures were applied so as to approximate the tissues loosely over the catheter with intervals for drainage. A wick was left in the lower end of the wound.

The later course of this case was that of the usual urethrotomy for stricture with mild sepsis. Some of the stitches had to be removed on the second day to get better drainage. The catheter was retained for a week. At the end of ten days some urine was passing by the penis. On the twenty-third day he was discharged, passing nearly three-fourths of the urine by the penis and with the wound nearly closed in.

The case is interesting because the trauma had acted not to rupture the urethra against bone or across ligamentous attachments in the classic way, but to tear off a relatively sound anterior urethra from a strictured posterior portion rigidly held in scar tissue. This combination of pathological lesion with a later trauma is apparently unique.

CONCLUSIONS.

As to conclusions from these cases. Case 1 was treated by the methods usually prescribed, and, as I now think, badly treated. There is no reason why this case should not have been more care-

² This means not the obsolete Cock operation, but a careful dissection in the middle line, till the membranous portion is found.

fully and closely sutured as was the third with at least as good a result, because the tear was not a complete one.

Case 2 illustrates only that a diagnosis of rupture of the mucous coat of the urethra does not always call for any operative interference.

Case 3 represents what I believe to be the proper treatment of this class of cases where the urethra has previously been normal. There is no reason why such a case, if seen reasonably soon after the accident, should not admit of a careful tight suturing of the urethra and a moderately close approximation of the other tissues. The course in this instance was so thoroughly favorable, the advantages of avoiding or minimizing a later stricture by this treatment so obvious, that I should feel myself negligent in not repeating this operation in any like case I might meet with in the future.

Case 4 is interesting only as a curiosity. So far as a cursory examination of the literature goes, careful and deliberate work in this class of cases seems rare. The descriptions of such procedure in the text-books (save occasionally in such texts as Hartmann's) are so vague as to discourage the attempt. The text-books still discuss the question of mortality. Mortality in these cases can hardly result except from grave coincident injury or from the foolish conservatism and delay of an older surgery. The problem to-day is not of saving patients, but of avoiding strictures, and the writer believes that this is best to be done by prompt and radical operative work.

DISCUSSION.

F. R. HAGNER, Washington, D. C.: I enjoyed the doctor's report of cases and he is to be congratulated on the first case. Only one thing, and that is in the use of silk in sewing up the urethra. It has always been my practice to use twenty day cat gut in those cases.

E. L. KEYES, Jr., New York: I must say I have found some difficulty in sounding stricture after urethrotomy, and I have been surprised at the result I got by using gentle dilatation at first or even omitting dilatation for a time, as the writer of the paper has so successfully done.

RENAL LAVAGE IN PYELITIS AND CERTAIN FORMS OF NEPHRITIS.¹

By F. M. JOHNSON. M. D., Boston.

IN this paper your attention is invited to a discussion limited to the subjects of pyelitis and certain stages of chronic parenchymatous nephritis. Since I began my investigations and studies to determine the possibilities of local medication when added to the ordinary remedial measures, a number of cases have been followed a sufficient length of time to enable me to arrive at certain fairly definite conclusions. In general the statement can be made that diseases of the kidney most certainly furnish a large field in which renal lavage may be employed with marked advantage.

Cystoscopic examination and catheterization of the kidney pelvis has been frowned upon by some who consider it dangerous and fraught with entirely too many chances of conveying infection from the bladder to the structure of the kidney. My own views regarding the safety of renal catheterization, based upon its employment more than 600 times, can be briefly stated. I am convinced that no other surgical procedure demands quite such extreme delicacy and gentleness, as are in this required, both in the handling of the instruments and in making the injections through the catheter. It is quite as necessary to use all the precautions for obtaining absolute antisepsis and asepsis, both as regards the operator and the instruments, and to a certain extent, the patient, as it is to employ them in preparation for major surgical operations. If adherence to these rules is made absolute, then the patient remains well guarded from all injury by this minor interference. From the beginning to the end of the procedure, patience is always a necessity. In cases in which the need for intervention is not urgent and consequently the required time is permissible, it is wise first to treat the urethra and to accustom that canal to tolerate the passage of sounds of a larger caliber than

¹ Read at the annual meeting of the American Urological Association, Boston, June 4-5, 1906.

is the cystoscope. The details of the technic have been fully described by many able writers and are doubtless well known to each of you. I realize fully while making these statements regarding the procedure, that, if performed by one who has not had proper training, much harm can thereby be done.

Turning now to the first of the conditions, I wish specially to consider, pyelitis has come to be recognized as a definite affection, and one that in frequency is not uncommon. Kelly of Baltimore, has aptly called it a danger signal. In this I fully coincide with him, and believe we should heed its warning significance. Ayers of New York, has been specially interested in this subject and regarding it has made careful investigations extending over a number of years. My own experiences have corroborated in every particular the deductions he has drawn.

Suppurative pyelitis is due to an ascending infection. Suppuration begins in the pelvis of the kidney, which finally becomes distended with pus. If the ureter is blocked so this material cannot be discharged into the bladder, by pressure and extension it encroaches upon the substance of the kidney until eventually almost the entire renal structure may be destroyed. In these extreme cases the organ becomes converted into a mere shell, supported by its capsule and filled with pus, a condition known as pyonephrosis.

Predisposing Causes—Inveterate cystitis from urinary retention. The urine becomes dammed back upon the kidneys, causing distention and, what is more serious, infection by bacteria which under these circumstances may pass along the ureteral mucosa from the bladder. Urethral stricture and enlargement of the prostate are well known elements causative of this condition. Infected emboli formed during the course of sepsis, or the infectious fevers may be carried by the blood stream and deposited in the kidney. Usually these produce suppurative foci limited to the kidney, but in some instances bacteria pass to the pelvis and pyelitis results. Renal calculi irritate the kidney and its pelvis, lower the resisting power, and invite the localization of microorganisms.

The urine in these cases is cloudy and deposits a heavy sediment. In this may be demonstrated by the microscope, a large

number of pus corpuscles, many epithelial cells from the renal tubules and a varying number of red blood corpuscles. The kidney epithelia are usually from both the convoluted and the straight collecting tubules. Connective tissue shreds in moderate or large amounts vary according to the destructive process in the kidney. Epithelia from the renal pelvis are also generally found. If a calculus be present, crystals of uric acid, gravel, or triple phosphates will be discovered. Albumin is commonly present in large amounts.

Symptoms—An acute abscess is ushered in by a pronounced chill, followed by a rise in temperature. Pain is generally present. Acute symptoms as a rule gradually subside, although a slight fever remains and pain or tenderness over the kidney, and in the inguinal region, testicles or legs becomes a constant feature. There may be emaciation or progressive deterioration of the general health.

The diagnosis is not difficult, but the condition is to be differentiated from cystitis. In pyonephrosis, pain and tenderness over the kidney, acid urine which remains persistently acid after it has been passed, and sudden fluctuations in the quantity of pus in the urine, are points that should be noted. If the pus be ropy and accompanied by considerable mucus, it comes from the bladder. If the kidneys are catheterized and the two specimens of urine collected separately, the diagnosis becomes absolute. It may be said in passing, that if at this time there be discovered a marked cystitis, it should be treated and controlled before other procedures are begun.

Prognosis—If both kidneys are involved, the termination is apt to be fatal. Acute purulent pyelitis as a rule, rapidly extends to the kidneys, producing suppurative nephritis or possibly perinephritic abscess. Chronic purulent pyelitis may exist for some time without involvement of the renal tissue, but sooner or later the infection spreads and destruction of the kidney follows.

Treatment—From the medical aspect, respite from arduous labor, a change of climate, rest in bed, an appropriate diet, the administration of salol, urotropin, cystogen, or potassium citrate with the free use of distilled or mineral waters. From the surgical side, removal of any obstruction to the free escape of urine,

relief of the cystitis, removal of renal calculi and evacuation of the pus. Briefly, nephrotomy or nephroctomy would appear to summarize the treatment agreed upon by most observers. This, however, must be characterized as a hasty conclusion, and before one of the major operations is decided upon an attempt to save the kidney by lavage should be made, unless the organ is known to be practically destroyed. This point can be emphasized in no better way than by giving the notes of a case in which that procedure was adopted.

CASE 1. Mr. L., aged forty-five. For a period of more than two years he had constant pain in the back over the region of the kidneys and also in the thighs and down the legs. At times these pains were so severe that hypodermatic injections of morphine alone would give relief. He lost flesh and strength, and finally became unable to continue his work. The urine was decidedly cloudy, intensely acid, and filled with pus. Cystoscopic examination of the bladder showed only a mild catarrhal cystitis, chronic in character. The urine from the left kidney was fairly normal and the ureter admitted the catheter with ease. The urine from the right kidney, as it flowed into the test tube, presented a milky appearance, and was made up largely of pus cells with a few red blood cells, shreds of connective tissue, and epithelia from the pelvis, convoluted and straight collecting tubules. Casts were not present. The first lavage of this kidney was made with warm boracic acid solution. It was introduced with difficulty, as a stricture of the ureter, a short distance from the bladder was encountered. After this was dilated, there was no subsequent difficulty. The first washing out caused an attack of colic that lasted not over ten minutes. Lavage was continued once a week for a period of some three months, and after that only occasionally. Mild silver nitrate and boracic acid solutions were the remedies that gave the greatest relief. During this time the man did not lose one day from his work, and the pains soon began to lessen and finally to disappear. After treatments were entirely stopped, the patient reported occasionally, but there has been no further demand for lavage of the kidney, as the pus entirely disappeared and not a trace of albumin can be found. He has kept in this almost normal condition for more than a year without any

special internal treatment. He has gained in weight and reports always as feeling very well.

The cause of the suppuration in this case was never discovered, but the condition as described was verified by a number of physicians, and microscopic examination of the urine was made by several men, all of whom reached the same conclusion. I believe that all were surprised at the rather remarkable results of lavage in this case. The apparent eradication of the disease and restoration to an almost normal condition that has been maintained for more than a year, shows, in my opinion, that lavage given in time, is a powerful remedial factor when added to the usual treatment. The case is rather unique, in that rest from daily labor during treatment was not possible. This one case is sufficient to prove certain points. At present I have charge of six or seven cases of like character, and all of them show marked improvement as a result of lavage.

Catarrhal pyelitis is much more common than is the purulent type. An extension of inflammation from the neck of the bladder may induce the lesion, infection from either a purulent cystitis, or a catarrh of the vesical trigone ascending the ureters to the renal pelves. Inflammation affecting the kidney may invade the pelvis of that organ. Long continued irritation from uric acid crystals, gravel, oxalate of lime crystals, or a combination of both as seen in stubborn lithemia, may produce pyelitis as also a nephritis. A renal calculus is deemed a causative element, yet as Ayres has pointed out, it is probable that pyelitis may be present before the appearance of a calculus, and even act as a contributing element in the formation of the latter. If a catheter that is not absolutely sterile be passed into the ureter through an infected bladder, it may start a pyelitis, or change a catarrhal into the suppurative type. Infection by micro-organisms from the general circulation and from interference in the flow of urine, are also considered to be causes of pyelitis. It is probable that the origin of many cases of nephritis arising without ascertainable cause, lies in a catarrhal pyelitis that has escaped detection.

Symptoms.—There is usually increased frequency of micturition, more often during the day, but at times during the night. In some cases spasmodic symptoms prevail. If pain is noticed, it

is as a rule, in the region of the kidneys. Cloudiness of the second specimen of urine, especially if it be persistent, should direct attention to the possibility of pyelitis; often the bladder or the prostate has received treatment which should have been directed to the renal pelvis.

Diagnosis—If after attention to diet and the administration of the usual urinary antiseptics, pelvic epithelia be constantly found in repeated examination of the urine, catarrhal pyelitis must be suspected. If the epithelia be closely studied and cells from the deeper layers be found, this, in conjunction with the subjective symptoms, will enable one to make the diagnosis of true inflammation of the renal pelvis. Chief among these symptoms is pain, especially along the course of the ureter, or in the testicle, or in the back; in the latter instance lumbago must be eliminated.

History of the Disease—Under internal treatment the trouble may disappear, but the rule is persistence of the lesion and eventually invasion of the tubules of the kidney. Progress may be very slow or exposure may determine a superadded attack of acute or subacute nephritis.

In contradistinction to this usual course, is the history of cases that have been treated by lavage. I refer now to cases of chronic catarrhal pyelitis in which the diagnosis was as positive as can be made, my diagnosis in a certain number of them simply supporting that of other physicians. Of such cases, my records show 57 that in addition to the usual treatment received lavage of the pelvis, with absolute relief from distressing symptoms and disappearance of signs of inflammation in those structures. Boracic acid, silver nitrate in dilute solutions, protargol, argyrol, and albargin, also essence of gomonal, were the medicaments employed. All were used in very mild strengths. Internal medication and the general plan of treatment were about the same as were used in the treatment of the purulent form of the affection.

Howard Kelly, Winfield Ayres, Tuckerman and Lewis, of the United States, Reginald Harrison, Casper, Albarran, Desnos, Hamonic, von Illyes and Lang, of Europe, and many others are earnest workers in this newer and extensive field of medical investigation and treatment. Local medication as an addendum to the ordinary remedial measures used in certain forms

of nephritis and pyelitis, is the specific object of study. The subject appeals strongly to me, gentlemen, as one that should be encouraged and investigated. While no absolute claims are made by any one of these observers, this procedure which is non-dangerous when proper care is exercised, gives us results that are certainly encouraging. They are particularly gratifying to the patients, all of whom are given relief without surgery under ether. In reality, the improved conditions are better and more forcibly manifested by the patients, than they can be explained by the theories of physicians, as those who are treated certainly know and realize when relief is obtained. I have now under treatment a number of patients, both males and females, in whom gonorrhoea and its complications appear to have been slowly burning fires, never thoroughly eradicated, always ascending in character, which have resulted in certain manifestations uncontrolled by ordinary measures. They are, however, controlled or absolutely eradicated by the potent influence of lavage when that expedient has been added to the therapeutic armamentorium.

Regarding this first subject of my paper, I would submit for your consideration these conclusions:

1. Pyelitis, both catarrhal and purulent, should receive more careful consideration by the profession.
2. More frequent and careful examinations of urine are required in order that pyelitis be more quickly recognized and the kidney thus safeguarded.
3. Lavage of the renal pelves should be better known and more extended recognition accorded to its merits.
4. Lavage is a procedure that is not only justifiable, but one that is positively and urgently indicated in all cases of pyelitis, except those that are tuberculous or due to a calculus, when diet, rest and ordinary internal medication fail to afford relief.

We turn now to the consideration of chronic parenchymatous nephritis. When this type of kidney lesion has not reached the stage of contraction, or small white kidney, a wonderfully improved condition can be established by appropriate lavage of the renal pelves. A glance at the causative elements in this disease as given by various authorities, shows that they include circulatory changes, as in heart disease, poisons or irritants in the blood as in certain drugs, a faulty metabolism as shown in lithemia, and

other irritants not yet determined. Another cause is extension of inflammation from the renal pelves. This type of inflammatory extension in which pyelitis is the originating factor, has not yet received the attention that is due to it, and in the future should receive closer observation. In a paper entitled "Lavage of the Renal Pelves in the Treatment of Bright's Disease," Ayres has detailed experiences which I find very similar to my own. The histories of a certain proportion of my 100 cases, are exactly as indefinite as were his in regard to causation of nephritis. Tyson believes that a long continued cystitis, especially that following gonorrhoea, is a factor in producing inflammatory changes in the kidney subsequent to extension of the process up the ureter to the pelvis and thence to the intertubular tissue. From as careful observations as it has been possible for me to make, it appears that this ascending inflammation is a causative element much more often than is usually thought to be possible. A catarrhal pyelitis often exists for a long time without causing any marked discomfort, and such symptoms as are complained of may wrongly be ascribed to rheumatism, lumbago or even indigestion. In cases of catarrhal pyelitis with slight invasion of the kidney, there will later on, in all probability, develop the interstitial changes that are found in advanced disease. When on repeated examinations of the urine there are found degenerated epithelial cells and albumin, the indications point to a beginning of nephritis. The presence of certain epithelia that are at times noticed in the urine, are due to the irritating effects of crystals, either uric acid or oxalate of lime; when they are eliminated, such epithelia disappear, showing that nephritis is not present.

Microscopic findings in subacute parenchymatous nephritis: Some of the epithelial cells forming casts degenerate and break down into granules, thus forming epithelial-granular casts. Another change produces epithelial-granular-fatty casts and finally free fat globules. Albumin is present, generally in large amount. The total quantity of urine is usually decreased and the specific gravity is consequently apt to be high, though the amount of solids is commonly decreased. As the disease becomes chronic, the amount of urine becomes more abundant and the specific gravity is lowered; the color also becomes paler. The diagnosis of chronic parenchymatous nephritis must always be based upon

the presence in the urine of casts, pus corpuscles, and kidney epithelia, the last not alone from the convoluted and narrow tubules, but frequently from the straight collecting tubules as well. The variety and the size of the casts are of marked importance from both a diagnostic and a prognostic standpoint. Severity of the renal lesion can be determined by the size of the casts. When the smaller types from the narrow tubules are present and in small numbers, the disease is mild in character.

The clinical symptoms are in the beginning insidious, consisting of digestive disturbances, as loss of appetite, or even nausea, anemia, waxy appearance of the skin, loss of strength and emaciation. Puffiness of the face and swelling of the feet finally develop and later anasarca may become general. Dull, aching pain in the lumbar region is also a symptom, but uremic manifestations are not so frequent in chronic parenchymatous nephritis as in the acute type. It is impossible to depict the exact clinical features or to state what the microscope shows in the urine in each and every case, but as I am dealing alone with the milder forms, I have dwelt upon the characters more common to them than to the more advanced types of the disease.

Treatment consists in putting the patient under correct hygienic influences, seeing that suitable clothing is worn and that rest is taken, giving nourishing foods, including a moderate amount of milk, the prescribing of iron, quinin and strychnin, and the judicious use of aperients. By most authorities, no measures are considered directly curative, and accordingly it would appear that the most that can be done is to place the patient in a condition most favorable for nature to aid, and to eliminate both mechanical and poisonous products that interfere with recovery. In lavage, however, we possess a means which is capable in many cases of affording positive relief.

Four patients suffering from the disease, had been discharged by their physicians as incurable, and later came to me in hope that something might be done to aid them. As the disease was well advanced, lavage was instituted without the promise of much benefit, although I did not regard any of the four as suffering from a nephritis so marked that they were in reality hopeless cases. To our great satisfaction, however, relief of the symptoms for which they consulted me, came fairly quickly under the in-

fluence of weekly lavage. Within a year all of them were discharged, albumin and casts having entirely disappeared from the urine. All of the patients have since reported from time to time, but the gains made under treatment appear to be permanent, as there has been return of neither albumin or casts. How long the present condition will be maintained I do not know, nor will I venture an opinion, but I am certain that the clinical aspect is one entirely different from that at the beginning of treatment; the patients themselves are fully aware of the change for the better.

Some seven or eight cases of advanced chronic parenchymatous nephritis were greatly relieved symptomatically, and their renal condition improved by the same method of treatment. All of fifty cases of the milder type have been made a great deal better. A few now need no treatment, some are still under treatment. The majority of the remainder, with the exception of five, now show but a trace or no albumin at all and the casts seem to have gone. A certain number are still receiving treatment for a pyelitis that remains. One of the most severe and stubborn cases I have watched more than two years, although for the past six months I have used lavage but once, as the patient has no annoying symptoms whatever. Out of the entire number of cases I have seen, there were only two who came directly after having been refused as risks by insurance companies, and in whom I found a mild type of parenchymatous nephritis, chronic in character. Consequently it can be said that practically all of my series had first been treated by the remedies that are in common use. Most of them came to me through the kindness of other physicians, a few direct from hospitals. As they all were private patients, each could be watched very closely. Five cases of rather advanced interstitial nephritis were not improved, at least while I was in attendance.

The natural query that arises is why beneficial action is exercised upon the kidney by lavage, which does not extend above the renal pelves? This result may be due to the cleansing of the pelves of the products of inflammation, also to the fact that better drainage for the kidney is established, and again that counter-irritation in the pelvis is produced by the warm solutions employed. A certain amount of the antiseptic solution may be taken up and carried through that organ. The exact *modus operandi*

is not known, but the fact that an improvement in all aspects takes place in certain selected cases, cannot be set aside even if the method by which the beneficial action is produced is hazy. Ayres, in the article to which reference has already been made (*Medical News*, July 1, 1905), has gone over this ground very carefully and cites six cases illustrative of the good effects of lavage. Case No. VI.—well advanced interstitial nephritis—was not improved by two treatments. In his other cases the results were excellent. I have followed out Dr. Ayres' method of treatment, my cases being also of a like character, and the results have been far beyond my expectations. I will not enumerate the cases in detail, for this paper is already longer than I intended making it.

When employing lavage, I prefer to use injections of warm materials, as they are better borne. Two to four ounces of the solution should be used on each side. The solution is slowly forced in until the patient experiences a sense of fullness over the kidneys, or one-half to one drachm at a time. For the bladder, I prefer to use distilled water, and it is much better tolerated when not heated. All solutions are freshly made when used, the medicaments being dissolved in distilled water. Protargol and albargin are used in the strength of one-half of one per cent.; silver nitrate, 1 to 10000, increasing up to 1 to 2000; argyrol freshly prepared at about five per cent., and essence of gomonol, 2 c. c. to the liter. This can be made in quantity and heated when used. I find it soothing in effect and also markedly stimulating. At first, renal colic was occasionally produced, but for a long time this has not occurred. I believe that too strong a solution of silver nitrate was at first employed.

Conclusions—1. If lavage be a justifiable procedure, and this now appears to be conclusively demonstrated, it is applicable in selected cases of nephritis.

2. If a beginning nephritis is due to the extension of inflammatory changes in the renal pelvis, lavage may confidently be expected to cure the condition.

3. In subacute and chronic parenchymatous nephritis, when the stage of connective tissue contraction has not been reached, lavage will stop the inroads of the disease and general improvement will follow its use.

DISCUSSION OF DR. GALLANT'S PAPER (SEE AUGUST ISSUE OF JOURNAL) AND DR. JOHNSON'S PAPER

DR. AYRES: I was very much interested in Dr. Gallant's paper. His S-shaped formation of the ureter producing an obstruction is new. I have never heard of a case just like it before. With the ureteral catheter, I made a diagnosis of a high attached ureter, but was unable to prove the diagnosis correct, because the opposite kidney had been destroyed by a pyonephrosis of fourteen years' standing. I made the diagnosis on these grounds. The amount of urine collected from the ureter in five minutes, was 4 c. c., while the amount collected from the renal pelvis in the same time was 10 c. c. The urine collected from the ureter was comparatively clear as was also the first portion of that collected from the renal pelvis, but as the pelvis became emptied, a considerable amount of pus was seen coming through the ureteral catheter. There was absolutely no nephroptosis as the cause of the residual urine, therefore, the only explanation is a high attached ureter. She had consulted me for hematuria. I found the hematuria was from the left side and was probably due to concretions in the renal pelvis, the kidney being in very good condition. A very large per cent. of pus and very little urea in the fluid was collected from the right side. As the patient is in pretty good physical condition, nothing has been done for her.

Regarding Dr. Johnson's paper, I was much interested because I believe I was the first to perform lavage of the renal pelvis for nonmicrobic nephritis. I have reported several cases that correspond closely to those whose histories Dr. Johnson read, and I want to speak of one woman that I have under observation. She came to my office in July, 1905, and gave the following history: Five years ago she had general neuritis followed by paralysis of the bladder and rectum. A catheter was passed to draw the urine, and almost immediately she got up a cystitis. After some time her physician recognized inflammation of the kidney as well. At the time she came to me she had cystitis, pyelitis, nephritis and mucous entero-colitis. I treated her three months, twice a week by lavage of the renal pelvis. At the present time there is not a trace of albumin in her urine, neither is there a cast, pelvic nor tubule cell to be found. She still has mucous entero-colitis and is at present under the care of Dr. A. A. Smith.

There is no question that if the proper cases of nephritis are selected for treatment by lavage of the renal pelvis, a certain number will be cured and a larger number will be benefited. It is not to be expected that lavage will benefit all cases.

FOLLEN CABOT, New York, N. Y.: Regarding Dr. Gallant's paper, I had a case similar in the character of the symptoms and the condition of the kidney produced by stricture of the ureter, and where operation showed destruction of the kidney tissue.

Regarding Dr. Johnson's paper, the subject is of extreme interest. I personally am trying to put on the brakes about the treatment of those diseases that have extended beyond the pelvis of the kidney. The dangers of renal lavage, where there is a cystitis, must be considered. Damage may be done by washing out kidney pelvis in those cases which have an infected bladder. I also use pelvic lavage twice a week, where much pus is present, with good results in pyelitis. I am inclined to think that the dilatation of the ureter is the chief cause of the improvement in these cases, and not the lavage. I have seen cases suggesting beginning hydronephrosis where dilatation of the ureter once a week produced improvement. Free drainage is in this way obtained and we frequently get good results. I also be-

lieve, regarding nephritis of any kind, that by the time we get evidences that a nephritis exists, we are too late in getting at the proper treatment; we should treat the preliminary pyelitis. Some of these cases of impending nephritis can undoubtedly be prevented by lavage of the kidney. We cannot tell much as to the extent of the process by the amount of pus or by the size of the casts in these cases. I do not mean to say that renal pelvic lavage is of no value, because I have used it with success in many cases, but in my opinion it is limited mainly to conditions in the renal pelvis or ureter where there is some tightening to be overcome or in those infections found localized in the pelvis or ureter.

DR. BRANSFORD LEWIS, St. Louis, Mo.: The limitations that have been placed upon this treatment by Dr. Cabot are good in respect to the prophylaxis in just such conditions. I have seen two cases illustrative of hydronephrosis or uronephrosis, that might have been absolutely prevented and the kidney saved by the use of ureteral catheterization and dilatation. We have this magnificent means of meeting these conditions, both in respect to prophylaxis and cure; not waiting until after they have reached this late condition, because then radical surgical procedure is necessary.

As to Dr. Johnson's paper, the subject is very important. We are investigating it now, but I think sufficient has been proven to show that brilliant results can be obtained. I have obtained absolute proof of the efficiency of treating pyelitis with these methods, but I have not had sufficient experience to say that nephritis is remediable by this means.

A. ERNEST GALLANT, New York. (Closing): We know it is difficult for urine to regurgitate from a full bladder, so that while Dr. Ayres' catheter can go up into the ureter and drain its pelvis fairly well, one cannot always completely empty the pelvis, and we have to deal with a constant retention. Though I have had but scanty opportunity for the use of pelvic lavage in pyelitis, its efficacy is, to my mind, unquestioned in appropriate cases. Drainage in all surgery is the one great advance of the last quarter century; and if we dilate the stricture, overcome the obstruction, wash out the pus and debris, and leave a clean channel through which the urine can freely pass, retention will cease, inflammation subside, and the patient be cured. Referring to my own case: as you look at the kidney which has been passing around, you will no doubt get the impression that this kidney still has considerable working tissue. It is surprising to see the change which has taken place since it was placed in formalin solution, contracting the thin, sacculated kidney to its present size.

F. M. JOHNSON, Boston, Mass. (Closing): As far as mere discussion of the paper goes, I would rather rest content with the condition of the patients who are now under treatment, compared with their condition when they first came to me, before lavage has been tried at all, and to say from the standpoint of the layman that we do not care what measures are employed as long as they do the proper good. If patients are ill they know it, and they wish to get well. We can theorize too much. We are working on a line of thought that is still somewhat vague, but is certainly in the right direction.

PROLAPSE OF THE KIDNEY FROM THE GYNECOLOGICAL POINT OF VIEW.¹

AUGUSTIN H. GOELET, M. D., New York.

CYNECOLOGY is no longer the restricted specialty it was a few years ago when practically it was limited to diseases of the female pelvic organs approachable through the vagina. To-day it includes everything within the abdomen of women, because it is now recognized that diseases of the abdominal organs have frequently an important bearing upon conditions in the pelvis and they are correlated.

The gynecologist of to-day is, or should be, also a genito-urinary surgeon, as well as an abdominal surgeon, because it is not possible to divorce diseased conditions of the urinary tract from those of the pelvic organs usually regarded as his sphere. But the kidneys in their relation to pelvic disease, were not given the attention they deserve before the organization of this Urological Association. Its founders at the outset, recognized this, and invited gynecologists to join their ranks. At the first annual meeting, it was my privilege to present a paper, and I believe I have contributed one every year since.

The mass of the profession is not, however, alive to the necessity of thus extending the field of gynecology. To illustrate the attitude of special bodies of gynecologists and the narrow view they hold even to-day, papers on prolapse of the kidney and other kidney conditions have been excluded from the section on Gynecology of the American Medical Association. At the New Orleans meeting, when I presented a paper describing in detail the technique of nephropexy, objection was made that it was a surgical and not a gynecological paper and should have been read before the surgical section. It was voted at that meeting to exclude all but strictly gynecological papers in future. The question arises: Do they know what constitutes gynecology in the broad acceptance of the term?

¹ Read at the Annual Meeting of the American Urological Association, Boston, June 4-5, 1906.

At the Saratoga meeting of the American Medical Association the year before (in 1902), I presented to the Gynecological Section, a carefully prepared paper pointing out the influence of prolapse of the kidney in causing and maintaining disease of the female pelvic organs. The discussion that followed, was mainly in opposition to the views presented, and I have seen no very general appreciation of my efforts to broaden the field of gynecology. Certainly I have been given no credit for my efforts. I do know, however, that many more are now operating for prolapse of the kidney.

About two years after presenting the paper referred to above, I met in my city, a gynecologist, who stated he had observed a recurrent hemorrhagic endometritis in five cases where there was also prolapse of the kidney, which did not yield permanently to repeated curettage, and were only cured after fixing the kidney. He saw an important relation in these conditions and regarded it as a new observation, and proposed to write a paper on the subject. I told him of my paper published two years before and sent him a copy. I asked him to publish his observations, as it would be a valuable corroboration of my views on the subject, but he has never done so. No doubt others have made similar observations along this line, but for reasons best known to themselves, they have been kept buried, which is neither just, nor in the interest of science.

That the views therein advanced, which I believe are original, shall not be forgotten, I will at the risk of wearying some of my hearers, repeat here the contentions emphasized in the paper referred to, the title of which was, "The Influence of Prolapse of the Kidney on the Production of Diseases of the Female Pelvic Organs."²

My contention was then, and it is borne out by recent and more extended observations, that the prolapsed kidney, under certain existing conditions, obstructs the return circulation from the pelvis through the ovarian vein chiefly, and thus maintains a congestion that necessarily operates in causing diseased or abnormal

² Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and published in the *Journal of the Association*, August 23, 1902.

states of those organs. That hence prolapse of the kidney may be regarded as one of the causes of endometritis, metritis, uterine displacements, uterine hemorrhages (menorrhoea and metrorrhagia), ovaritis, salpingitis and cystitis. That prolapse of the kidney may be either a direct or an indirect cause of those conditions, and, while infection is essential for the development of inflammatory states here as elsewhere, a maintained congestion lessens the resistive power of these structures and thus affords a fertile field which might otherwise prove sterile.

As to the *modus operandi* of the kidney in causing obstruction to the return circulation from the pelvis, it is chiefly by direct compression of the ovarian vein as it ascends along the spine. The lower pole of the kidney swings inward towards the median when the kidney descends and overlaps the ovarian vein and ureter: therefore, when the waist is constricted by corsets or clothing, the kidney is forced backward against the spine and the vein is caught between. Thus compression of the ovarian vein is certain and unavoidable with the prevailing methods of dress.

The ovarian vein may also be constricted by the ureter bending over it when the kidney descends, since the vein crosses the ureter in front of it. Constriction of the ovarian vein may also occur from distention of the ureter above the point of flexure when the kidney is prolapsed.

It is fortunate that these sources of compression of the ovarian vein operate only for a part of every twenty-four hours, when the patient is on her feet or in the erect position; for they cease when she assumes the recumbent posture for rest, because the kidney then assumes its normal position; otherwise the consequences would be more pronounced. But we must not lose sight of the fact that the erect position is maintained throughout the greater part of the twenty-four hours, and during that time the kidney is down and pelvic congestion is more or less constant under the prevailing conditions.

It is a very well recognized fact that maintained pelvic congestion from other sources is a cause of disease of these organs; then why not from this? It has been shown very conclusively that prolapse of the kidney may cause and maintain congestion of all the structures of the pelvis.

The association of pelvic disease in some form with prolapse of the kidney, is of such frequent occurrence that it must be more than coincident; moreover, a cure is frequently impossible until the displacement of the kidney is permanently corrected by operation that secures fixation in its normal position.

The similarity of some of the symptoms produced by prolapse of the kidney and pelvic disease, should be sufficient to induce the gynecologist to associate them clinically, and it is difficult to comprehend how he can do otherwise. Yet it is a condition frequently overlooked and when discovered, it is often disregarded. It is so common among women, especially those who consult the gynecologist and neurologist, and its bearing upon both gynecologist and neurological affections is so important, that it is very necessary always to ascertain when the kidney is displaced and when it occupies its normal position. If examination for this condition is included as a routine measure in the diagnosis of all these cases, a great many displaced kidneys will be found that would otherwise be overlooked, and if proper attention is given them, there would be fewer chronic invalids among women, going from one physician to another seeking relief that they do not get. Fully one-third of all gynecological patients have prolapse of the kidney, and it is a low estimate to say that 50% of the female patients of the neurologist are similarly afflicted.

I frequently have women come to me after gynecological operations have failed to effect the anticipated cure, the symptoms being caused by prolapse of the kidney that has been overlooked, and when they submit to operation for correction of the kidney displacement, a cure is established. I must therefore insist that when operations upon the pelvic organs are necessary, and one or both kidneys are found to be prolapsed, they should receive proper attention also, for in this way only is full justice done these patients. I am so confident that the kidney displacement is responsible for many of the pelvic conditions encountered, or the symptoms they apparently produce, that I should refuse to be held responsible for the result if operation for its correction was declined.

RENAL CALCULUS AND GYNECOLOGICAL CONDITIONS SIMULATING URETERAL DISEASE.¹

By EDGAR GARCEAU, M. D., Boston, Mass.

URETERITIS is a disease which is very easy to overlook. Situated in the middle of the body, beyond the reach of inspection, the ureter offers peculiar difficulties in the diagnosis of its diseases.

Owing to the course of the ureter under the broad ligament, it is natural that pelvic conditions should exercise a decided influence in the etiology of ureteritis. Of these conditions the inflammations are the principal ones. Inflamed pelvic lymphatic glands lying close to the ureter have been known to cause an infection of the canal, the germs gaining access to it through the lymphatic vessels by direct continuity. An inflamed Fallopian tube may likewise cause infection in the same way. This is true also of metritis. Among the chief causes, however, is ovaritis with adhesions. An inflamed prolapsed ovary lying next to the ureter, sometimes for many months or years, frequently gives rise to ureteritis. Lacerations of the cervix involving the vaginal walls, may extend as far as the ureter. Ureteritis follows in some cases. The occurrence of pyelitis, so frequent in the latter months of pregnancy, suggests pressure of the child's head on the ureter as it crosses the pelvic brim, bruising of the ureter, subsequent ureteritis, and infection ascending to the kidney above. Among the less frequent causes of the disease may be mentioned uterine cancer, ovarian or parovarian tumors, uterine fibromata, and prolapse of the uterus which pulls on the ureter. Another pelvic condition giving rise to the disease is an appendiceal abscess. This may explain the symptom of frequent micturition at times observed in cases of appendicitis.

The symptoms of ureteritis are few, and unless one is on the lookout for the trouble, they may readily be overlooked. The chief symptom is frequent micturition, usually not attended with pain. The patient has to pass her water many times day and

¹ Read before the American Urological Association, New York, April 3, 1906.

night, and there is a constant nagging desire to empty the bladder. Tenesmus may or may not be present. The most important sign on vaginal examination is the great tenderness of the affected ureter when pressed upon, and with this pressure there is a coincident extreme desire to urinate. If the ureter has been diseased a long time, it is possible that there may be some enlargement which may be appreciated on vaginal examination, but it is never very marked. Pressure on the abdomen along the course of the ureter sometimes elicits pain, especially pressure at the pelvic brim. The cystoscope shows a congested trigonum and there may be red streaks leading from the affected ureteral orifice. Swelling of the ureteral eminences is a pretty constant sign. The bladder urine in these cases usually shows very little alteration provided there is not much cystitis, as may be the case. The separated urines, however, give a great deal of information. The best way to collect these urines is by placing the patient in the knee-breast position and catching the urine with Kelly's oblique cystoscope as it drops from the ureteral orifice. The urine coming from the diseased side is always a little cloudy as compared with the urine of the opposite side, and on microscopic examination an excess of desquamated epithelium will always be found. It is curious to note that in cases of simple ureteritis, the presence of a large amount of pus is not an important sign. Sometimes there may be only a few pus corpuscles and sometimes pus may be absent.

The symptoms just described are met with both in case of simple ureteritis and in case of ureteritis with a slight stricture, which does not give rise to dilatation of the canal above.

It is easy to see how a simple ureteritis may be overlooked. It is well known that any pelvic condition such as salpingitis, giving rise to general congestion of the pelvic cavity, may have associated with it the symptom frequent micturition. This symptom, in such cases, is usually supposed to be the result of vesical hyperemia, a part of the general pelvic engorgement. This may be the case. Hyperemia of the vesicle neck and trigonum produces great sensitiveness of the vesical orifice and consequently an increased desire to empty the bladder. As increased desire to empty the bladder is practically the only subjective symptom of ureteritis, it is seen how readily the affection may be confounded

with simple vesical hyperemia, especially in view of the very meager information given by the examination of the bladder urine. A urine which contains merely a slight excess of epithelium and a very few pus corpuscles, may well be thought to be due to vesical hyperemia. The differential diagnosis is to be made only by a careful physical examination, which will include separation of the ureteral urines. At the same time it is to be borne in mind that ureteritis is a frequent association of a prolapsed ovary or pus tube, and that careful examination will discover its existence in a large number of cases.

In cases of ureteritis due to and associated with a narrowing of the caliber of the canal, we have a far different clinical picture. If the narrowing is slight, the symptoms are those of chronic ureteritis, but if we have to do with a tight stricture, symptoms dependent upon enlargement of the upper passages assume prominence. The diagnosis of stricture with dilatation is usually an easy one. Symptoms on the part of the kidney are marked. Pain of a colicky character, soreness on pressure and enlargement of the kidney are readily appreciated. On examination with ureteral catheters, the stricture is detected, and on passing it we get at once a gush of urine which may amount to many cubic centimeters.

A dilated ureter, situated above a stricture low down in the pelvis, has been mistaken for a purulent salpingitis, and incision into the supposed pus tube has resulted in a permanent vaginal fistula. The differential diagnosis between these two conditions should be easy. Symptoms on the part of the kidney should not be overlooked, and the passage of the ureteral catheter at once clears up the diagnosis.

The differential diagnosis of calculus in the ureter presents peculiar difficulties. When the stone can be felt, however, the diagnosis is easy. Sometimes the stone can be felt on vaginal examination, as a hard little body readily appreciated by the examining finger. Pressure on the stone elicits pain, whether through the vagina or through the abdomen. The separated urines give a great deal of information, and here again the knee-breast position is the one which should be used for the collection of the urine. Kelly's oblique cystoscope should be selected in

order to get the urine free from adventitious blood. It is difficult to see how the introduction of a catheter, however skillfully passed, can avoid the possibility of starting a slight microscopic hemorrhage. Cystoscopic appearances are sometimes helpful, and the bladder lesions, such as small ulcers and patches of inflamed mucous membrane, may be found grouped about the orifice of the affected side. The X-ray may give valuable help in diagnosis, and so also may the wax-tipped bougies.

The differential diagnosis is not always easy. The passage of sand and blood clots may simulate stone and may give rise to the same train of symptoms. Obstructive lesions may also lead to the wrong diagnosis. Appendicitis has also been known to simulate stone in the ureter and the X-ray has shown a shadow of the concretion in the appendiceal region. Tuffier proposes to pass a ureteral catheter with a wire in it, and then take the X-ray picture. The different positions of the wire and the concretion upon the photographic plate is indicative of the kind of lesion.

The symptoms of simple ureteritis and of ureteritis from calculus are identical, and here the correct diagnosis may be a difficult matter. Careful attention to the history of the case, the method of onset, and a thorough physical examination will often clear up the diagnosis.

Stricture of the ureter is also misleading, and here the symptoms may be identical. Passage of bougies, especially the wax-tipped bougie, will sometimes clear up the case.

The association of an old pus tube, or a prolapsed adherent ovary with stricture of the ureter, is to be borne in mind. Here we may have evidence of cystitis, or at least of an irritable bladder, and in these cases most of the mistakes will be made. A most careful vesical examination is necessary, and also the passage of graduated bougies. The separated urines will give valuable evidence. A prolapsed and adherent ovary has associated with it periodic attacks of pain with the menstrual flow. The feel of a hard body in the vaginal wall with its long axis corresponding with the direction of the ureter is suggestive of stone. An adherent ovary is in the peritoneal cavity, in Douglass's pouch or behind the broad ligament. In the latter case it would have a greater thickness of tissue between it and the examining finger than would

a calculus. The greater hardness and thickness of calculus and its distinct mobility in the direction of its long axis, is further evidence. Besides this there may be evidence of an old peritonitis in the case of an inflamed ovary.

Cancer of the sigmoid, cancer of the uterus, and old adhesions, may involve the ureter and cause a stricture with subsequent dilatation of the upper passages. This is not at all rare, especially in the case of cancer of the uterus, and it is quite a frequent cause of death in this disease. The presence of demonstrable cancer is sufficient to suggest the true nature of the conditions, and puts one on the right track at once. In the case of old adhesions there are usually signs of an old pelvic inflammation.

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EXPLOSIVE RUPTURE OF THE TESTICLE FROM TRAUMA.

By FREDERIC J. COTTON, M. D., Boston.

J. J. C. entered the City Hospital Relief Station August 27, 1904. He was forty-seven years old; had previously been in good health, but has had a left-sided varicocele and a right inguinal hernia.

During the latter part of the afternoon, while he was a spectator at a local ball game, he had been struck in the scrotum by a batted ball. There was a moderate amount of shock and excruciating pain which subsided within a short time.

The writer saw him about 9:15 P. M. There was then a large and steadily increasing tumor of the scrotum, mainly on the left side. It was then the size of a musk-melon, of a purple black color with actual infiltration of the skin itself, tense, but only moderately tender. The discoloration had then extended for an inch on the under side of the penis, and there was swelling, not as yet discolored, up into the left groin. During the few minutes of examination and preparation, there was a definite increase in the tumor and a blackening of the lower portion of the scrotum.

Nothing could be palpated in the mass and the provisional diagnosis was made of a ruptured left-sided varicocele. The patient would not give even a conditional consent to castration, but wished an operation.

Ether was given, and an incision made anteriorly. The subcutaneous tissue was infiltrated with blood an inch thick. Then the dartos was reached and cut, and under it was more infiltrated cellular tissue; beneath this an already existing rent about an inch long in the tunica vaginalis was found and enlarged. In the cavity of the tunica were four to six ounces of clots; on removal of these, shreds of testicle tissue followed, and there was fresh bleeding from a tear in the spermatic artery about one inch above the testis, and also arterial bleeding from what had been the base of the epididymis, next the testis near the globus minor. There was nothing left of the testis but shreds adherent to the tunica albuginea. It had evidently exploded under the swift impact as a full bladder bursts under a blow. The tunica albuginea was torn completely across in irregular lines. The epididymis showed but little damage. The cord was undamaged save for rupture of some of the varicose veins, which bled moderately.

The two bleeding arterial points were ligatured with catgut, as was the ruptured vein in the cord.

Incisions were made (from inside the first cut) into the cellular tissues, and all removable blood squeezed out.

The right side of the scrotum was intact save that it contained some blood evidently forced over from the left side under a pressure that the septum could not withstand.

After removal of clots and irrigation, the tissues were sewed up layer by layer with catgut without drainage, and a light pressure applied.

There was discoloration the next day extending up onto the abdomen, and into the perineum, but no swelling.

Convalescence was uneventful. He was transferred from the Relief Station to the main hospital and at six days after the accident was up without symptoms and was discharged well on the eighth day. The wound was then healed. There was no swelling and the discoloration had largely disappeared.

EDITORIALS.

URETHRITIS IN YOUNG BOYS.

THE urethritides encountered in young boys may be divided into two classes, namely, the non-gonococcic urethritis and the urethritides in which it is possible to demonstrate the presence of Neisser's organism, no matter what may be the mode of transmission of the pathogenic agent.

Among the various causes of non-gonococcic urethritis, such as a metastatic localization during an infectious disease, for example, as mumps, diathetic influences due to gout, a lymphatic constitution, a dermatosis of the external genital organs, occasionally traumatism or masturbation, there exists one which dominates all others on account of its importance; we refer to tuberculosis of the urethra. Tuberculosis of the anterior urethra when it has fully developed gives rise to a purulent or puriform discharge generally slight in amount, but more often of a serous nature, in no way resembling the discharge encountered in ordinary gonorrhoea. Bacteriology alone will settle the diagnosis and as far as treatment is concerned it should be above all a general one. When properly carried out a cure may be obtained.

Gonorrhoeal urethritis can be contracted without venereal contagion, or, on the contrary, the contagion may be direct. The former would seem to be rather rare, because a child's glans is usually covered over by the prepuce. However, an erection, which is always a possibility, may partially expose the glans, so that direct contact with objects recently contaminated with gonorrhoeal pus may give rise to a typical gonorrhoeal urethritis in young subjects. For example, a case has been reported by Fraser-Harris of a boy fourteen years of age who contracted a very severe urethritis by wearing a pair of contaminated drawers.

Urethritis resulting from sexual intercourse in young boys, although not frequently met with, appears to be becoming less rare. Cases of coitus in children are certainly becoming quite numerous, even in subjects from five to ten years of age, as in

instances reported by Merk, Zambaco, Stekel, and others, the sexual act being accomplished normally, or, on the contrary, penetration may not have gone beyond the vulva, which, for that matter, is quite sufficient for inoculation to take place. A premature awakening of the sexual instinct, perversion and vice are the natural causes.

Sexual relations may be established between children among themselves, but more particularly in the same family preferably between brother and sister, and for this reason it is most irrational to allow small girls and boys to occupy the same bed. Among the poor the father and mother are frequently in a bed nearby, so that the children imitate what they suppose is being done by their parents. In other cases a small boy will be outraged by various persons, such as nurses or governesses who occupy the same bed as the child, but there are occasionally instances where, in spite of the most minute inquest, the etiology will remain doubtful.

The symptoms offer nothing particular. The pus is thick and greenish yellow, deeply spotting the linen, but little by little it becomes lighter in color and the discharge lessens. Micturition is more or less painful, and during the acute period one will usually find an edema of the prepuce. The balano-preputial mucosa becomes irritated and phimosis or paraphimosis may result.

Serious complications may arise, such as cystitis and particularly stricture of the urethra. Epididymitis and gonorrhoeal rheumatism have been met with exceptionally, but a case of generalized gonococcic infection has been reported by Esmarch.

The treatment should be prophylactic and curative. The first consists of moral education and the prevention of dangerous promiscuity. As to the local treatment the usual methods employed for gonorrhoea in the male are to be resorted to, although injections should be at least one-third weaker than the strength employed in the adult.

THE ACTION OF NEPHROTOMY IN NEPHRORRHAGIA

THE action of nephrotomy on hematuria appears evident when the operation has allowed one to recognize and do away with the cause of the hemorrhage, but it is a difficult matter to explain the cases where nephrotomy has failed to reveal any renal lesion, but, nevertheless, causes the hemorrhages to cease as if by enchantment. Hematuria has three factors, namely congestion, the action of the nervous system, and some lesion, occasionally unrecognizable. Dieulafoy, in considering the question of hematuria due to nephritis, also admits the part played by congestion and the nervous system, and he points out that hypertension of the blood, intense congestion arising in certain cases of acute nephritis, congestion of nervous origin which occasionally is present at the commencement of Bright's disease, may be sufficiently intense so as to give rise to a very abundant hematuria.

Now nephrotomy directly acts on each of these factors of hematuria. Albarran explains the good effects of the intervention by its reflex action on the nervous system, as well as on the renal congestion. The incision of the parenchyma, on account of the large amount of blood to which it gives issue, does away with the renal congestion and produces a diminution of the intrarenal tension more completely than any other conservative operation.

By lowering the vascular pressure, it regularizes the circulation and puts a stop to blood extravasation. Malherbe and Legueu also admit this influence over the congestion and believe that nephrotomy attains its curative results in hematuria by the intense derivation which ensues.

The nervous system plays a part in the production of the congestion and consequently of the hematuria, either because its action is provoked by a change in the blood or nervous system, or that it consists in a reflex produced by the presence of some lesion, and it is in reality only by a reflex action opposed to the nervous cause, that one may explain the results obtained by a simple cystotomy in a case recorded by Passet, and ureteral

catherization in one of Potherat's patients. The success obtained by Picqué was only temporary, perhaps because the cystotomy, having merely acted on the nervous system, and having no effect upon the lesion, the latter, after a certain time, again provoked the nervous influence which in its turn set up congestion, which was followed by hematuria.

Since operations performed on the urinary system at some distance from the source of the hemorrhage have been known to provoke a favorable reflex action, nephrotomy still more, acting directly on the renal parenchyma, may probably give rise to this nervous action, which will aid in stopping the hematuria.

Nephrotomy also allows one to directly attack the causal lesion of the hematuria. In lithiasis the calculus giving rise to the hemorrhage can be removed, and Pousson even believes that it puts an end to the spasm which prevents the calculus to progress down the ureter, giving rise to retention. It also acts spontaneously over the lesions of sclerosis and it is well-known that these lesions, which, alone, may give rise to hematuria, generally accompany all the other causes of hemorrhage and that they may combine their hemorrhagiparous action to that of the already existing cause, thus making the kidney bleed.

Now, nephrotomy by producing a retrogression of the sclerotic lesions assures a more or less permanent cure. The manner of action of simple nephrotomy, which one would believe merely temporary, assumes a permanent aspect in many cases. The explanation of this may be found, perhaps, in the fact that frequently those lesions of nephritis which are accompanied by hematuria are limited and for this reason they may retrogress, or, on the other hand, undergo cystic transformation or the formation of fibrous islets, while the neighboring portions of the parenchyma undergo compensation hypertrophy.

CORRESPONDENCE

NEW YORK, September 7th, 1906.

DR. CHAS. G. CUMSTON,

Editor American Journal of Urology.

Dear Doctor:—In the August issue of the JOURNAL there is an error, in the article on "Intra-vesical Operations with the Aid of the Cystoscope," by Dr. Henry Meyer, of San Francisco, which does me an injustice, altho' I am sure that it was unintentional on Dr. Meyer's part.

The instruments designated "Fig. 1, Fig. 1X, Fig. 2, Fig. 2X," are, in the former, my modification of Prof. Nitze's cystoscopic lithotrite (and, as in the present form it has displaced the former type, I may assume it to be also an improvement on the original); the second instrument, the foreign-body forceps, is after my *original model*, and the late Prof. Nitze had no connection whatsoever with its construction.

Dr. Meyer's mistake arose from the fact that the firm of Louis and H. Loewenstein, of Berlin, who manufactured the instruments for me, issued them, in their catalogue, as parts of the Nitze operating cystoscope, without any reference to my work. Upon my calling their attention to the omission, they promised to rectify the error in the next issue of their catalogue.

The instruments were first described by me in the *Journal of Cutaneous and Genito-Urinary Diseases*, of March, 1901, and will also be found *properly* catalogued in the catalogue of the Kny-Scheerer Co., of New York.

I am willing to ask no credit for the improvement of the lithotrite; but I must insist upon the credit for the foreign-body forceps.

May I ask you, in view of the facts, to give this letter a place in the next issue of the JOURNAL OF UROLOGY?

Very truly yours,

FREDERIC BIERHOFF, M. D.

SAN FRANCISCO, Sept. 12, 1906.

CHAS. G. CUMSTON, ESQ., M. D.

Dear Doctor:—It is a source of regret to me to learn that I have made the error described. I wrote to Dr. Bierhoff, explaining to him that in Europe, these instruments which I described as the operation cystoscope, are known as Nitze instruments; that the manufacturers, Messrs. Loewen-

stein, in Berlin, catalogue and sell the same as such; that I really had no reason to have presumed they were not, until I was so informed by Dr. Bierhoff. Since receiving this communication, I feel desirous of rectifying any error which I may have made unconsciously, and while I cannot very well enter into any discussion bearing on this subject, I am naturally desirous of doing what seems right, and for this reason, I would request that in view of the statements presented by Dr. Bierhoff, that a correction should be made, so that the readers of the JOURNAL will know that the instruments described as No. 1 and No. 1X in my article should have been described as Dr. Bierhoff's modification of Prof. Nitze's instruments and that the instruments described as No. 2 and No. 2X is an original model of Dr. Bierhoff's. This seems to me to be the proper course to pursue, and if you will make a statement to that effect, I believe it will satisfy Dr. Bierhoff and at the same time be right. You will understand that it is not possible for me to know why some of these instruments should be known as Nitze instruments and sold as such by the European manufacturers, when in reality they are not. I presume, however, that these questions occasionally arise and I am desirous of having it appear correct, and trust you will be good enough to do so. I will write to the manufacturer for an explanation and obtain his version, for my own personal satisfaction, as I believe they should rectify any errors they have made. I am,

Yours very truly,

HENRY MEYER.

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